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| EXAMINER | |
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| GHOWRWAL, OMAR J | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/593,251 | LIU, ENHUI | |
| | Examiner | Art Unit | |
| | OMAR GHOWRWAL | 2463 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *17 November 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3 and 7-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 7-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/17/09 has been entered.

### *Response to Remarks*

2. This Office action is considered fully responsive to the amendment filed 11/17/09.

3. The objection to claim 1 has been withdrawn because it has been amended accordingly.

### *Response to Arguments*

4. Applicant's arguments with respect to pending claims 1-3, 5, 7-17 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Objections*

5. Claim 12 is objected to because of the following informalities: "the transport network" lacks proper antecedent basis. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-3, 5, 12-13,15-16** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Publication No. 2003/0204616 A1 to *Billhartz et al. ("Billhartz")*.

As to **claim 1**, *Billhartz* discloses a system of dynamic QoS negotiation in a Next Generation Network (NGN) (paras. 0032-0035, QoS negotiation in a network), comprising:

A Resource and Admission Control Subsystem (RACS) (figs. 1-5, destination node 4), adapted to process a resource reservation request required for a media flow of a service transferred in the NGN and obtain QoS requirement parameters required by the service from the resource reservation request (para. 0032-0035, node 4 receives RREQQ with updated QoS link metric), perform authentication and determine admission control decision parameters based on the QoS requirement parameters in accordance with operation policy rules and a user profile configured by an operator (para. 0032-0035, node 4 replies to RREQQ with flow identifier (i.e. authentication, as it reads and understands the RREQQ packet and replies to it), and also sends updated QoS link metric, i.e. flow control and updated metric are control decision parameters, based on received QoS, which is in accordance with if support for the QoS desired can be performed, and the QoS desired is based upon a user profile configured by the source node, i.e. since source node is a user device such as a PDA, mobile phone, etc.), and availability of transport network resources (para. 0032-0035, replies indicate valid paths based on QoS requirements), and send the admission control decision parameters to a

concerned Transport Functional (TF) entity for execution (para. 0032-0035, replies transferred to source node (TF)),

the Transport Functional entity, adapted to ensure QoS of the media flow of the service transferred in the NGN according to the admission control decision parameters (para. 0032-0035, source node generates QoS route metrics based upon replies);

wherein the RACS has interfaces with the TF entity, a Service Control Functional (SCF) entity, a Network Attachment Subsystem (NASS) and a Network Management System (NMS) (para. 0032-0035, node 4 interfaces with source node (TF), also take the source node to be the SCF and NMS—source node decides which valid route to take and sends CONFQ messages--hence it is an "entity" that "controls a routing service" and also is a "system" that "manages the network" in terms of selecting a valid path for data to traverse over within the network of figs. 1-5 (i.e. it manages the route selection for this network), take node 2 to be NASS—as the intermediate node is a "subsystem" of the entire network of figs. 1-5); and

wherein the RACS obtains the QoS requirement parameters from the TF entity, the SCF entity, the NASS or the NMS (para. 0032-0035, node 4 (RACS) obtains QoS RREQQ from source node (TF, SCF, NMS)).

As to claim 2, *Billhartz* further discloses the system as in claim 1, wherein the system further comprises:

the service control functional (SCF) entity, adapted to obtain the QoS requirement parameters required for the service requested by a user terminal by parsing service signaling or determine the QoS requirement parameters according to

service policies, and send the QoS requirement parameters to said RACS (para. 0032-0035, source node determines QoS metrics, based on requirements, and sends it to node 4).

As to claim 3, *Billhartz* further discloses the system as in claim 2, wherein the system further comprises:

the Network Attachment Subsystem (NASS), adapted to manage and configure a user access network, communicate with said RACS and said SCF entity, and provide said RACS and said SCF entity with user profile information associated with the service (para. 0032-0035, intermediate node 2 aids in configuring the link from source to destination and communicates with these two nodes, and also provides them with the QoS information that is updated in the RREQQ and RREPQ, which pertains to the initial user profile that was set by the source node).

As to **claim 5**, *Billhartz* discloses a method of dynamic QoS negotiation based on a system of dynamic QoS negotiation in a Next Generation Network (NGN) (paras. 0032-0035, QoS negotiation in a network), comprising:

A. obtaining, by a Resource and Admission Control Subsystem (RACS) in the NGN, QoS requirement parameters required by a service (para. 0032-0035, node 4 receives RREQQ with updated QoS link metric);

B. performing, by said RACS, admission control in accordance with the QoS requirement parameters, and determining admission control decision parameters (para. 0032-0035, node 4 replies to RREQQ with flow identifier and also sends updated QoS

link metric, i.e. control decision parameters, based on received QoS, which is in accordance with if support for the QoS desired can be performed);

C. sending, by said RACS, the admission control decision parameters to a transport functional (TF) entity at a network boundary, and executing, by said transport functional entity at the network boundary, the admission control decision parameters to process and transfer a media flow of the service accordingly (para. 0032-0035, node 4 sends parameters to intermediate node, which is at the boundary of the system in figs. 1-5, and intermediate node transfers data after link is established); and

D. obtaining, by said RACS, the QoS requirement parameters of the service through the TF entity, a Service Control Functional (SCF) entity, a Network Attachment Subsystem (NASS) or Network Management System (NMS), wherein the RACS has interfaces with the TF entity, the SCF entity, the NASS and the NMS (para. 0032-0035, node 4 receives QoS metric from intermediate node, and interfaces with TF (intermediate node), SCF (also intermediate node)—it forwards QoS requests to the destination node hence it is an "entity" that "controls the forwarding of requests for quality of service", NASS (source node), NMS (source node)--source node decides which valid route to take and sends CONFQ messages--hence it is a "subsystem" of the entire network of figs. 1-5, and it is a "system" that "manages the network" in terms of selecting a valid path for data to traverse over within the network of figs. 1-5 (i.e. it manages the route selection for this network)).

As to claim 12, *Billhartz* discloses the method as in claim 5, wherein said determining by the RACS the admission control decision parameters comprises:

obtaining, by the RACS, user profile information of the service and policy rules information configured by an operator (para. 0032-0035, node 4 replies to RREQQ with flow identifier (i.e. authentication, as it reads and understands the RREQQ packet and replies to it), and also sends updated QoS link metric, i.e. control decision parameters, based on received QoS, which is in accordance with if support for the QoS desired can be performed, and the QoS desired is based upon a user profile configured by the source node, i.e. since source node is a user device such as a PDA, mobile phone, etc.)), making admission control decisions for the QoS requirement parameters of the service based on the user profile information and the policy rules information (para. 0032-0035, node 4 replies to RREQQ with flow identifier (i.e. authentication, as it reads and understands the RREQQ packet and replies to it), and also sends updated QoS link metric, i.e. control decision parameters, based on received QoS, which is in accordance with if support for the QoS desired can be performed, and the QoS desired is based upon a user profile configured by the source node, i.e. since source node is a user device such as a PDA, mobile phone, etc.), deciding whether to permit the media flow of the service to enter into the transport network and to be treated with the required QoS, and determining the admission control decision parameters (para. 0032-0035, node 4 replies with valid paths for flow to enter the network under the QoS rules, and sends flow identifier and updated QoS metric, i.e. control parameters).

As to claim 13, *Billhartz* further discloses the method as in claim 5, wherein determining by said RACS the admission control decision parameters comprises:

obtaining, by the RACS, current status information of transport resources in the network (para. 0032-0035, node 4 obtains updated QoS metric RREQQ), making admission control decisions for the QoS requirement parameters of the service based on above information (para. 0032-0035, node 4 uses updated QoS metric to send replies), checking whether there are enough transport resources available in the network to meet the QoS requirement parameters of the service (para. 0032-0035, node 4 receives RREQQ, i.e. sources are available), and determining the admission control decision parameters (para. 0032-0035, node 4 sends replies with flow identifier and updated QoS link metric).

As to claim 15, *Billhartz* further discloses the method as in claim 5, wherein the QoS requirement parameters comprise:

bandwidth required for transporting the media flow of the service, as well as allowable delay, jitter, and packet loss rate (para. 0032, QoS parameters based upon available bandwidth, end-to-end delay, end-to-end delay variation, error rate).

As to claim 16, *Billhartz* further discloses the method as in claim 5, further comprising:

directly initiating, by a user terminal, a resource reservation request to the TF entity for the media flow of a developed service via a dedicated path-coupling QoS signaling (para. 0032-0035, source node, which is a user terminal, sends RREQQ to intermediate node);

upon receiving the resource reservation request from the user terminal, sending, by the TF entity at the network boundary, a resource reservation request carrying the

QoS requirement parameters of the media flow of the user service to the RACS, and executing step C (para. 0032-0035, intermediate node forwards RREQQ to destination node).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2003/0204616 A1 to *Billhartz et al. ("Billhartz")* in view of U.S. Publication No. 2004/0151114 A1 to *Ruutu*.

As to claim 7, *Billhartz* does not expressly disclose the method as in claim 5, wherein when the service comprises a plurality of media flows, it is needed to determine the QoS requirement parameters for each of the media flows respectively.

*Ruutu* discloses fig. 5, para. 0043-0044, various messages from various applications with QoS, the messages are prioritized.

*Billhartz* and *Ruutu* are analogous art because they are from the same field of endeavor with regards to data processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the transmission according to QoS parameters as taught by Ruutu into the invention of Billhartz. The suggestion/motivation would have been to

provide end-to-end quality of service for application message transfers utilizing message queues (Ruutu, para. 0001).

10. **Claims 8, 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2003/0204616 A1 to *Billhartz et al. ("Billhartz")* in view of U.S. Publication No. 2003/0129988 A1 to *Lee et al. ("Lee")*.

As to claim 8, *Billhartz* further discloses the method as in claim 5, wherein, before the step of obtaining by the Resource and Admission Control Subsystem (RACS) in NGN QoS requirement parameters required by a service the method further comprising a step E:

initiating, by a user terminal, a service request to the SCF entity (para. 0032-0035, source node send QoS request to intermediate node);

when the service request carries the QoS requirement parameters of the service, obtaining by the SCF entity the QoS requirement parameters of the service by parsing the service request (para. 0032-0035 QoS requests sent to intermediate node, and analyzed if QoS can result in valid path, i.e. request is parsed).

*Billhartz* does not expressly disclose when the service request does not carry the QoS requirement parameters of the service, determining by the SCF entity the type of the service in accordance with the service request, and determining the QoS requirement parameters required for the service in accordance with the service type.

*Lee* discloses if the BSC 20 performs steps 102 and 104 as in the conventional technology, it determines whether the call requires the QoS service by checking whether a QoS parameter is included in a Call-Establishment-Req message. If the QoS

parameter is not included (i.e. no QoS requirement parameters carried), the BSC 20 requests the profile of a user for which the call is to be set up to the profile server 40 and acquires it. The BSC 20 then determines whether a required QoS parameter can be provided by checking the received user profile in the format of FIG. 8A or 8B. If the service is available, that is, the user profile includes the QoS parameter, the BSC controller 311 goes to step 512 (i.e. determining service type, QoS parameter) (para. 0073).

*Billhartz and Lee* are analogous art because they are from the same field of endeavor with regards to data processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the determining service and QoS parameter as taught by Lee into the invention of Billhartz. The suggestion/motivation would have been to determine the service and QoS parameter if they are not provided (Lee, para. 0073).

As to claim 10, *Billhartz and Lee* further disclose the method as in claim 8, wherein when the user terminal is a mobile terminal (Billhartz, para. 0032-0035, mobile ad-hocs), the step E further comprises:

sending, by the SCF entity, a resource authentication request containing the QoS requirement parameters of the service to the RACS via a corresponding interface with the RACS (Billhartz, para. 0032-0035, intermediate node sends RREQQ to node 4);

after authenticating successfully, notifying, by the RACS, the user terminal via the SCF entity (Billhartz, para. 0032-0035, node 4 validates path, sends reply through intermediate node to source node);

initiating, by the user terminal, a resource reservation request to the TF entity of the network via a path-coupling QoS signaling carrying the QoS requirement parameters of the service (Billhartz, para. 0032-0035, source node sends RREQQ to intermediate node, containing QoS requirements); handling by the TF entity at a network boundary the QoS signaling and sending a resource reservation request containing the QoS requirement parameters of the service to the RACS via a corresponding interface with the RACS (Billhartz, para. 0032-0035, source node sends RREQQ to intermediate node, containing QoS requirements, which is then sent to destination node 4--this can be done after a successful connection is set up then fails—see fig. 5). In addition, the same suggestion/motivation of claim 8 applies.

11. **Claims 9, 11** are rejected under 35 U.S.C. 103(a) as being unpatentable U.S. Publication No. 2003/0204616 A1 to *Billhartz et al. ("Billhartz")* in view of U.S. Publication No. 2003/0129988 A1 to *Lee et al. ("Lee")* and in further view of U.S. Publication No. 2004/0022191 A1 to *Bernet et al. ("Bernet").*

As to claim 9, *Billhartz and Lee* do not expressly disclose the method as in claim 8, wherein when the user terminal is a fixed terminal, the step E further comprises: the SCF entity sending a resource reservation request containing the QoS requirement parameters of the service to the RACS via a corresponding interface with the RACS.

*Bernet* discloses RSVP better suited for QoS data exchange between fixed endpoints (para. 0009). Furthermore, fig. 6 shows RSVP request going from sender S (take to be SCF) to Nn1 (take to be interface with RACS) to N2 (take to be RACS), and these nodes are fixed, not mobile.

*Billhartz, Lee and Bernet* are analogous art because they are from the same field of endeavor with regards to data processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the RSVP as taught by Bernet into the invention of *Billhartz and Lee*. The suggestion/motivation would have been to allow RSVP signaling to be identified as qualitative (Bernet, para. 0011).

As to claim 11, *Billhartz and Lee* further disclose sending, by the SCF entity, a resource authentication request containing the QoS requirement parameters of the service to the RACS via a corresponding interface with the RACS; after authenticating successfully, notifying, by the RACS, the user terminal via the SCF entity; initiating, by the user terminal, a resource reservation request to the TF entity of the network via a path-coupling QoS signaling carrying the QoS requirement parameters of the service; handling by the TF entity at network boundary the QoS signaling and sending a resource reservation request containing the QoS requirement parameters of the service to the RACS via a corresponding interface with the RACS (see rejection for claim 10).

*Billhartz and Lee* do not expressly disclose wherein when a *token mechanism* is used, the method further comprises: after authenticating successfully, returning by the RACS an *admission token* to the user terminal via the SCF entity; carrying the *admission token* in a path-coupling QoS signaling and transferring the admission token to the RACS via a resource reservation request; checking by the RACS whether the resource reservation request has passed the authentication and *searching for relevant information of the service in accordance with the admission token.*

*Bernet* discloses Standard RSVP messages typically carry a quantitative description of the relevant QoS traffic in parameters referred to as token-bucket parameters (in Intserv semantics) (para. 0009), i.e. the QoS RSVP messages exchanged contain the admission token as token bucket parameters, and hence are used in QoS negotiations.

*Billhartz, Lee and Bernet* are analogous art because they are from the same field of endeavor with regards to data processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the token bucker parameters as taught by Bernet into the invention of Billhartz and Lee. The suggestion/motivation would have been to provide a system and method that enables QoS to be based on qualitative factors (Bernet, para. 0011).

12. **Claims 14, 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2003/0204616 A1 to *Billhartz et al. ("Billhartz")* in view of U.S. Publication No. 2004/0228363 A1 to *Adamczyk et al. ("Adamczyk")*.

As to claim 14, *Billhartz* further discloses the method as in claim 5, wherein the admission control decision parameters comprise:

bandwidth allocation and outgoing aggregation path control information (para. 0032-0035, node 4 sends updated QoS (BW) and flow identifier (aggregation path control info)).

*Billhartz* does not expressly disclose gate control and Differentiated Service Code Point mark.

*Adamczyk* discloses a routing gate to control communications with a user (para. 0583) and DiffServ Code Points (para. 0524).

*Billhartz and Adamczyk* are analogous art because they are from the same field of endeavor with regards to data processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the routing gate and DSCP as taught by Adamczyk into the invention of Billhartz. The suggestion/motivation would have been to control communications with a user (Adamczyk, para. 0583).

As to claim 17, *Billhartz* further discloses the method as in claim 5, further comprising:

configuring, by the Network Management System (NMS) or the Network Attachment Subsystem (NASS), bandwidth allocation and outgoing aggregation path control parameters onto the TF entity at the network boundary via the RACS (para. 0032-0035, node 4 sends updated QoS (BW) and flow identifier (aggregation path control info), which is configured by the source node via the destination node sending replies, the source node then selecting a path based on these parameters).

*Billhartz* does not expressly disclose gate control and Differentiated Service Code Point (DSCP) marking control.

*Adamczyk* discloses a routing gate to control communications with a user (para. 0583) and DiffServ Code Points (para. 0524).

*Billhartz and Adamczyk* are analogous art because they are from the same field of endeavor with regards to data processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the routing gate and DSCP as taught by Adamczyk into the invention of Billhartz. The suggestion/motivation would have been to control communications with a user (Adamczyk, para. 0583).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMAR GHOWRWAL whose telephone number is (571)270-5691. The examiner can normally be reached on Monday-Thursday, 8:00am-5:00pm est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on (571)272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O. G./
Examiner, Art Unit 2463

/DERRICK FERRIS/
Supervisory Patent Examiner, Art Unit 2463